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Original Communications.

ON LEPROSY, AS IT EXISTS IN THE SANDWICH ISLANDS.

By SAMUEL KNEELAND, M.D.

DURING a visit to the Sandwich Islands in the summer of 1872, among other objects, novel and interesting to a physician, I was particularly interested in the asylum for lepers, situated in the outskirts of the town of Honolulu. I took some pains to inform myself, by actual observation of the patients, and also from official sources, in regard to this disease; and I send this communication, thinking it may prove of interest to your readers, to whom the subject has been occasionally introduced in your pages.

At the time of my visit there were about twenty patients in the asylum at Kalihi, the sexes being equally divided, and of all ages from over 50 to 5 or 6 years. Though some of the cases were horrible to look at, I was told that many worse ones had recently been sent to the national asylum on the island of Molokai.

The two usually described varieties seemed here to co-exist in the same person, and it seems to me that they are simply stages of one disease, either the skin or the nervous system being chiefly affected, according to the constitution or habits of the patient.

The skin of the Malay race in these islands is very dark, yet plainly exhibits the commencement of the disease. The first symptom is, in most cases, a tuberculous condition of the skin over the eyes, and on the forehead, cheeks, and chin; the skin looks as if indented with small pits, like those on the top of a thimble. After a while, the flexors of the fingers begin to contract, with loss of sensation in them, gradually creeping up the hands, with loss of the nails, and finally of the phalanges. The skin over the whole body gradually becomes affected, preventing its action, finally destroying the digestive powers, and arresting nutrition. They all said that they suffered little or no pain. All ages are affected, and all ranks of society. It is almost inseparably mixed with syphilis, which has raged like wildfire in these islands since the visit of Capt. Cook. No treatment seems of any avail, except to remedy the syphilitic taint; tonics, stimulants, alteratives, have alike been tried in vain. How it is produced is a matter of question; there is a general belief that it was brought from China; it was not known in these

VOL. LXXXVIII. No. 10

islands until 1848, at which time it was said to have been introduced by Chinese; and it was not noticeable as a disease of the country till ten years afterwards. There can be but little doubt that it is spread by cohabitation and inoculation of any of its diseased fluids, in the same way as syphilis; that it is incurable, and that the only remedy is segregation of the affected.

While the breaking up of families and the isolating of so many seems to be a hard alternative, experience teaches that it is the only one. There is a want of common prudence displayed by the natives that almost sets at naught the best directed efforts of medical men, and a recklessness displayed in the indulgence of animal appetites that goes far towards eliminating that pity that we are all ready to feel for these unfortunates.

A darker discoloration of the skin generally precedes the thickening, after which paleness supervenes, with shrivelling, scalliness, and insensibility. The deposit under the skin is accompanied by a general disturbance of nutrition, involving the nerve trunks; the tubercles are raised above the skin, are hard and rough, on one or both sides of the median line, and unsymmetrical. The diseased patches may occur anywhere on the body, on the trunk and limbs having a dry and scaly look, with blunted sensibility. A kind of granular tissue seems to be deposited in the fibrous textures of the integuments; in the so-called anæsthetic form, it is most abundant in the nerve tissue, while in the tubercular form it occurs chiefly in the skin and mucous surfaces, particularly the pharynx. According to Neumann, as given in Fox's and Farquhar's report on the "Endemic Skin Diseases of India" (London, 1872), "the papillary body is elevated, the cutis thickened, the normal tissue replaced by minute cells slightly expanded by acetic acid; so that in some parts there only remained a slight amount of normal tissue—the fat goes. At first it seems there are colloid cells in the corium, then aggregated colloid globules, and then the small cells infiltrate the whole cutis. Many observers believe the new growth begins about the hair follicles, and takes the form of strands. In fact, the cell-growths invade the fibrous textures gradually, to more or less defacement of them."

Leprosy is the *Elephantiasis Græcorum*, as distinguished from *Elephantiasis Arabum*—the latter being the elephant or Barbadoes leg, characterized by a hypertrophic growth of the cutaneous cellular tissue, with infiltration by a fluid rich in fibrine, the lymphatics being obliterated and the veins obstructed.

In this disease it is important to distinguish between its production and its propagation.

There is no evidence that leprosy has ever been produced in the Sandwich Islands. The usually assigned causes of the disease do not exist here. They are a cleanly and well-fed people, their fine climate preventing physical misery, and malaria not existing; they

eat almost no salt food, and no grains, living principally on the taro plant, dried fish and cuttle fish, with plenty of fruits, as bananas, oranges, figs, mangoes, melons, &c., and the surar cane. No light appears to be thrown on its origin by the habits or food of these islanders; and it has been evidently introduced, probably by the Chinese, as it may be in any climate; it is said to exist in Canada and in our Southern States. It is peculiarly prevalent in China, and we may soon expect to see it figure among the diseases of California, and elsewhere in the United States where Chinese labor is introduced. Whether it may result here, or anywhere, from alleged deficiency of nitrogen or potash in food, physiological chemistry must hereafter determine. It is most abundant about Honolulu, where the natives are the best fed. Being there, it will continue to increase, and add its share to the rapid degeneracy of this race. It is rare in the equally exposed white races, so that the natural or acquired characteristics of races may enter into the solution of this difficult problem.

The tendency of those who have never seen the disease is to believe that leprosy is not contagious; the opposite is the belief in the Sandwich Islands, the opinion of physicians there being, as far as I could ascertain, that it is contagious. The government report on this subject for 1872 asserts, most emphatically, that it is contagious; it says:—

“Daily experience confirms this. Whole families, and those who have lived with them, member by member, becoming diseased; such being the nature of the disease, it is a terrible sight to see sometimes, on entering a native house, a leper, some relative or friend of the family, sitting among little children, and perhaps eating with them out of the same calabash, with sores on the fingers and poisonous breath. The lives of half a dozen persons are endangered by one person who should already be considered lost.”

All cases that can be traced are found to result from contact with the diseased, either by intermarriage, cohabitation, hereditary transmission, or inoculation in some way. I saw, at Kalihi, a native woman, her English husband, and their son of eight years old; all three were marked with the disease, the woman, the worst case, having communicated it to the man, and also to the child.

Tradition, popular prejudice, medical experience, and legal enactments unite in the recommendation of the practice of segregating the leprosy as the only means of keeping this terrible disease within bounds. The uncommonly social and hospitable character of these islanders is eminently favorable to its spreading; and their love of ease, indifference to life, and insensibility to danger aid powerfully in its propagation.

The belief in the contagious character of this disease is based upon ample observation. In the two years ending March 31, 1872, there were at the Kalihi Asylum 202 lepers—124 males and 78 fe-

males, including 26 children under fourteen years of age; and since its establishment nearly 600 cases have been treated there; most of these, as they grow worse, are sent to the National Asylum on Molokai, but 29 of the number died at Kalihi. Up to the same date, nearly 600 had been received at Molokai, of whom 200 had died, about 400 remaining there at the above date, who, sooner or later, will fall victims to it.

The following are extracts from the Report of Dr. F. W. Hutchison, Minister of the Hawaiian Islands Board of Health, for 1872:—

"As very few persons, native or foreign, are acquainted with the locality and surroundings of the leper settlement founded by the Government and Legislature of the Hawaiian Kingdom, it may perhaps be well to recall, in a succinct form, the facts in regard to its situation, surroundings, and its actual condition at the present moment.

"Let us land on the southern side of Molokai, in the little harbor of Kaunakakai, take horse, ride over the gradually ascending plains in a northeasterly direction to high pasture lands, until we arrive at the edge of the famous precipice of 'Kalaupapa,' 2000 feet above the sea level. This precipice we shall have to descend, for it is the only communication by land with 'Kalaupapa' (the landing-place of the settlement from sea). A zigzag road has been cut down this nearly perpendicular precipice. Arrived at its foot, and following the trail, we soon arrive at the 'Flat,' or landing-place, where several native houses are scattered about. On an even, good road, the leper settlement is soon reached; it is large and extensive, surrounded by grand and imposing scenery. The papaia, puhala and banana plant give the village a cheerful appearance. Some of the houses are fenced in by stone walls, others are placed amongst potato fields or pasture lands. The view is generally picturesque; vegetation is luxuriant, the scenery is beautiful, and its whole appearance, apart from the lepers themselves, pleasant and agreeable.

"A little further on, the house of the keeper is reached. He has a neat, commodious house, with two rooms to himself, the other portions of the house being appropriated for stores of various descriptions, out-office for the supply of medicine, books, &c. The buildings adjoining the principal keeper's house are two hospitals (male and female) for those of the sick unable to attend to themselves—separate houses being provided for all those persons of the leper valley who require special attention in regard to diet, accommodation and medical aid—in fact, for all those too far advanced in the disease to take care of themselves.

"In the quadrangle, of which the Superintendent's house forms one side, are to be found separate houses built for boys and girls, with a special building for a school-room; an instructor for which establishment is generally to be obtained among the lepers themselves. There are several other buildings included here, useful or necessary for general purposes, and the special control of the stock and material of the establishment.

"Care is taken that the patients received here have suitable food; a number of milch cows furnish plenty of milk, morning and evening, and the food is prepared by a Chinese cook (a leper) belonging to the establishment.

"The children are taught the ordinary school instruction of the islands—reading, writing, arithmetic, geography, and singing.

"The scene presented to a stranger on visiting these school-rooms must necessarily be a sad one, yet he cannot but reflect that it is well for the country and the whole race that these young people—poisoned in their blood—are taken away from the community at large. The children, with an exception or two, do not seem to feel their misfortune; when they leave school, they act as others of the same age, running or playing on their way home, apparently unconscious of the fate that awaits them.

"A little distance from this central place, nearer the seaside, a little church has been built, where, every Sunday, a native minister, a leper himself, holds a service. It is well attended by the poor people for whose benefit it has been specially erected.

"The houses of the lepers are scattered throughout the valley. There is a stream at the head of the settlement, and a visitor will meet numbers of lepers on an ordinary fine day, some leading horses, carrying bundles of clothes in the direction of the stream; others carrying calabashes of poi (taro mixed with water), sweet potatoes, &c.—in fact, the usual life of a Hawaiian village will be seen there in its usual routine and manners.

"The houses are generally well kept and clean (much to the credit of the lepers themselves and the nurses placed over them). Included in the number of lepers are several half-castes, two or three Chinamen and one European. The females are industrious, making mats and other material for the internal comfort and accommodation of their cottages. The males, who are able and *willing* to do something, work their potato fields, raise sugar cane, bananas, &c. A great change for the better has taken place among them during the past two years.

"Fresh provisions only are issued to the lepers—five pounds of meat and twenty-one pounds of paiai (the root of the taro, *arum esculentum*, when baked resembling an insipid sweet potato—a very nutritious food) per week are the ordinary rations issued from the superintendent's department. The meat generally is mutton, but this is varied at times by fresh beef. The ration is a large one, and exceeds that issued to the soldiers of the best supplied European and American armies; nevertheless the complaint is chronic at Molokai as well as at Kalihi that sufficient food is not supplied to the patients. The Board, however, can fairly assert that these people are better supplied than they ever were in their own homes; a proof of the assertion may be found in the fact that many of these people, living at the landing place of Kalaupapa, have been anxious to make themselves lepers, and probably the whole population of the hamlet would not object to being taken under the supervision of the Board.

"Some marriages have taken place among the lepers, but sterility is the almost universal result—and it is fortunate that such is the case. Within the five years' existence of the institution, and in a population of several hundred people, only two births have been reported. The first case was born dead; the other is living now, borne by a woman who shows no signs of leprosy, but her husband, with whom she lives, is a perfect leper. Some doubts have been expressed about the paternity of this child.

"Leprosy is more common among males than females; two-thirds of the lepers in the valley are males."

According to the late Dr. Trousseau, of Paris, as stated to me by his son, whom I met at Honolulu, experiments show that the incipient stage of leprosy can be cured by destroying the skin down to the muscles by the actual cautery; and by a severe constitutional treatment of arsenic, and cantharides in almost poisonous doses, its action on the skin, and non-action as a diuretic, being secured by combining it with opium, belladonna, &c. Though the remedy is apparently as bad as the disease, it is interesting as showing from what direction, if any, a cure may be hoped for.

I have some photographs of this disease, taken from life this summer, which I shall be glad to show to any interested.

Boston, December, 1872.

Clinical Lecture.

ON DISEASES OF THE THROAT.

By F. I. KNIGHT, M.D. Harv.

THE LARYNGOSCOPE.

GENTLEMEN,—Every physician acknowledges the importance of physical diagnosis, and employs its methods as far as he is conversant with them. And for this reason, it may well be wondered by you why the laryngoscope, which, as its name implies, is an instrument by means of which we can view the larynx, has not been more generally introduced into practice. It has, as is well known, often been the fate of the most important discoveries in medicine to be slowly and reluctantly received by the profession, who have, on the other hand, often been excited to false hopes by the claims of unreliable observers.

Let us look at the history of laryngoscopy and see if there is any special reason why it has been so little adopted in general practice.

Numerous attempts to view the interior of the larynx had been made during the early part of the present century, some of which were entirely successful. This was specially true of those of Garcia, a singing teacher of London, who studied and described accurately the action of the vocal cords in singing, in a paper presented to the Royal Society of London in 1855.

Although Garcia's experiments were widely noticed at the time, no practitioner thought of adopting the instrument for practical purposes.

In the winter of 1857-58 Prof. Czermák visited Vienna for the purpose of studying the production of certain guttural sounds. Here, he heard that Türk, Professor in the Vienna University, had, during the previous summer, made some attempts to examine the larynx by the aid of small mirrors placed in the back of the throat, but had given them up, and laid aside his mirrors without obtaining any satisfactory result. Czermák borrowed the mirrors of Türk, and, having substituted artificial light for the light of the sun, which is so very uncertain during the winter in Vienna, he soon convinced himself that the laryngoscope could be made an invaluable means of diagnosis in affections of the larynx.

He at once made the announcement of the discovery of its value at one of the Medical Societies of Vienna, not claiming the discovery of the instrument, but of its practicability. He called the instrument the Liston-Garcia mirror, Liston being one of the earlier men who had employed a mirror for examining the throat. Even at this meeting, Türck does not seem to have been fully aroused to the great importance of the discovery, but implied by his remark that he thought Czermák was expecting altogether too much from the instrument. Afterwards, however, when the importance of it did dawn upon him, he claimed the discovery, and said his investigations were only suspended on account of a want of sunlight, and that he had intended to resume them.

It is hard for a man to have *almost* discovered anything, but we must assign Czermák the same relation to his predecessors that Morton holds to those before him who theorized about and dabbled with the effects of ether. Each made certain what was half-suspected, half-known.

Among the reasons why the art was not at once generally received, may be mentioned:—

First, The opposition on anatomical grounds, no less a person even than Trouseau, the great clinical teacher of France, claiming that the position of the epiglottis would render a view of the larynx, by means of a mirror placed in the pharynx, impossible. Türck opposed rhinoscopy on the same ground.

Second, The complication of instruments. As soon as laryngoscopy was found to be possible, all sorts of contrivances for intensifying light, magnifying the image, &c. &c., were gotten up, which distracted attention from the instrument in its simplicity.

Third, Want of opportunity of instruction in the use of the instrument, or of seeing it used. As you are aware, this clinic, which has been open only a few months, affords the first opportunity which has been offered in New England for students or any of the profession who may be interested to see the instrument applied to the treatment of affections of the throat, and our University is the only one yet, as far as we know, which gives the students a practical knowledge of the instrument, in its regular course. If it had not been for the personal efforts of Czermák to spread a knowledge of this instrument by visiting the principal cities of Germany, France and England, and demonstrating, and giving instruction to pupils wherever he went, it is doubtful whether it might not have been again forgotten.

This instrument requires for its use that little art which it is so difficult to get by one's self, but which comes easily with a little personal instruction. It is my intention to help you all to obtain this art, but before describing the laryngoscope, I will call your attention to the preparations of the larynx, which I have before me on the table, not describing them minutely, but simply refreshing your memory with the names and relations of the different parts. Here you have a preparation of the *trachea* surmounted by the cartilages and ligaments of the larynx; the *cricoid* cartilage surmounting the trachea, in shape like a seal-ring, the seal behind with its strong ligamentous attachments to the thyroid above, viz., the conoid ligament in front, with which we have to do in laryngotomy, and one on each side attached to the inferior cornua of the thyroid; of the *thyroid* cartilage I will

only remark that it is not composed, as you will find it generally described in your text-books, simply of two parts, but is really composed of three; the middle piece, which has been accurately described by Rambaud, Halbertsma, Luschka and Mandl, being usually of a rhomboidal shape, from an eighth to a quarter of an inch in breadth in different parts, composed of smaller cells than the lateral wings, not separated by any distinct fibrous tissue from the lateral parts, but its junction being distinguished by a more linear arrangement of the cells. Behind, notice the arytenoid cartilages surmounting the cricoid; notice particularly the loose capsular articulation, which permits very free rotation; notice the triangular base of the arytenoid, to the anterior angle of which is inserted the vocal cord, and to the external angle the muscles which open and close the ligamentous glottis; notice next the true vocal cords, strong, elastic bands, really duplicatures of the elastic membrane of the larynx, inserted anteriorly into the middle piece of the thyroid, and posteriorly into the anterior angle of the arytenoid cartilage on either side; notice the *epiglottis*, whose leaf-like shape you see in its entirety, as the muscular and ligamentous tissues which properly surround it have been cut away to show its attachment by a narrow pedicle to the middle piece of the thyroid.

In this next preparation, you see dissections of the muscles of the larynx. Here, behind, are the *posterior crico-arytenoid* muscles, the respiratory muscles of the larynx, which, being attached to the posterior surface of the cricoid cartilage and the external angles of the arytenoid by their contraction, rotate the *anterior* angle of the arytenoids outward, and thereby open the glottis. Here you see the *lateral crico-arytenoid* muscles which are attached also to the *external* angles of the arytenoid cartilages, but forward to the sides of the cricoid, so that their contraction rotates the anterior angles inward, thereby closing the glottis and acting as antagonists of the preceding muscles.

Here we have the *crico-thyroid* muscles which stretch the cords longitudinally by drawing the thyroid cartilage down towards the cricoid. Now, where shall we look for the antagonists of these muscles? We have found the tensors, where are the laxors? You will find the *thyro-arytenoids* put down as such, but probably incorrectly. It is more likely that the *hyo-thyroid* and *sterno-thyroid*, acting together, are the antagonists of the crico-thyroids.

On this preparation, you see only the *hyo-thyroid*, the *sterno-thyroid* having been cut away; but notice the oblique ridge on the thyroid, into which they are both inserted, and you can easily imagine how their simultaneous contraction would tip the thyroid up in front if the fibres of the *sterno-thyroid* were inserted a little further back and the fibres of the *hyo-thyroid* a little farther forward on the oblique ridge. Tipping the thyroid cartilage up in front would relax the cords.

You see here the *arytenoideus posticus* connecting the two arytenoid cartilages, with its transverse and oblique fibres, whose function is probably to close the cartilaginous glottis after the anterior angles of arytenoids have been rotated into apposition and to fix these cartilages during phonation.

We have left the *thyro-arytenoid* muscles, *internal* and *external*, whose origin and insertion are implied by their name, and whose function is thought to be, certainly that of the *internal*, to regulate the tension of the cords by stretching them laterally.

On this third preparation we will look at the larynx as a whole, considering those parts the image of which we shall by and by study in the laryngeal mirror. Commencing with the base of the tongue, notice its follicles, which are often more or less enlarged; next, the *epiglottis* and the ligaments, median and lateral, which connect it with the tongue, many of the fibres of the lateral ligaments running to the pharynx rather than to the tongue, thereby giving rise to a diversity in nomenclature. Notice the deep depressions on each side of the median glosso-epiglottidean ligament which are called the *vallecule*, which are sometimes subdivided by ligamentous bands on either side, which may be mistaken for cicatrices from ulceration. The epiglottis is here quite erect and leaf-like in shape, but may physiologically be quite pendant and variously bent in at its sides. Following down the laryngeal surface of the epiglottis, you see a protuberance called the tubercle or sometimes the cushion of the epiglottis, which has formerly been thought, probably erroneously, to have some special function in the closure of the glottis. Notice the lateral boundaries of the upper aperture of the larynx, the *ary-epiglottidean folds*, which contain the cartilages of Wrisberg posteriorly; notice still farther, posteriorly, the *cornicula laryngis* or cartilages of Santorini; below, the *ventricular bands* or false cords of the larynx, separated from the true *vocal cords*, which are situated still lower, by the opening into the *ventricle* of Morgagni. Notice the extent to which a probe can be passed into the ventricle, which is very much more capacious than is generally supposed, extending sometimes far up towards the base of the tongue, and not infrequently serving as a lodging place for foreign bodies of considerable size. Two other favorite lodging places for foreign bodies are the *vallecule* and this deep sinus, which you see on either side, bounded externally by the thyroid, and internally, principally, by the cricoid cartilage and the tissues covering them, these sinuses being called the *sinus pyriformis*, *dextra* and *sinistra*.

To obtain an image of these parts, which is called laryngoscopy, it is only necessary to have a bright illumination of the pharynx, and a small mirror held in proper position and at a proper inclination, by means of a long stalk or handle attached to it. This illumination of the pharynx can be obtained on a bright day by the direct rays of the sun. We place the patient in a chair facing the sun, taking our own position opposite him, and letting the sun's rays fall over our right shoulder. We then direct the patient to incline the head backward, open the mouth as widely as possible and protrude the tongue, the extremity of which, by means of a napkin, we dry and hold with the thumb and finger of the left hand, the thumb being uppermost, the remaining fingers of this hand being placed over the right lower jaw of the patient or under his chin, which gives a little better control over the patient. Then taking the laryngeal mirror in our right hand, as we would hold a pen, and having warmed its reflecting surface, so that the breath will not condense upon it, and having warned the patient that we are not going to hurt him, that he must breathe regularly and try not to swallow or gag, we introduce the mirror into the mouth, carrying it rapidly backward, keeping close to the hard palate, and avoiding the tongue, until we reach the soft palate and uvula, which we take upon the back of the mirror and push gently but firmly upward and backward.

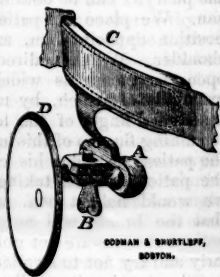
The stalk of the mirror should be held all the time in the left angle of the mouth. If the larynx does not come readily into view, the patient should be requested to pronounce "eh," which in any event he should do when you wish to see the action of the cords during vocalization.

You may be able to obtain a good view without pushing the mirror far enough back to touch the pharynx, but, on the other hand, this may be necessary. Sometimes, and it is well to remember this, in case of very sensitive patients, a good view may be obtained by holding the mirror mid air, as it were, over the larynx, not touching even the uvula with it, but only requesting the patient to vocalize. The laryngeal mirror, wherever held, should be held firmly, and it is well, ordinarily, to rest the little or ring finger of the right hand on the face of the patient, in order to secure greater steadiness. On the occurrence of gagging, as a rule, the mirror should be withdrawn and the tongue released. You can usually, however, illuminate the pharynx more readily and effectually by means of a reflector attached to your own head; when sunlight is used it should be plane, and when artificial light is used it should be concave. They have been made to be held in the mouth or worn upon the forehead or before the eye, non-perforated and perforated.

In employing artificial light, where economy of its rays is desirable, a perforated reflector worn before the eye is preferable, and the best form which I have yet seen is that devised by Türk, which, by means of a pad for the bridge of the nose, insures a firm support to the head-band, to which the reflector is united by a ball and socket joint; none of the other head-bands give a sufficiently firm support to enable one to manipulate the reflector readily with one hand. Various special lights, with reflectors attached to them, have been invented, but are not convenient for general practice. Various forms have been devised for the laryngeal mirror, square, round and the "church-window" form of Bruns. Of these, the round is the most convenient, and should be attached directly to a straight stalk at an angle of 120 degrees. The diameter of the mirror varies from half an inch to an inch and a quarter. The most convenient size for the majority of cases is one about three-quarters of an inch in diameter.*

When it is necessary to employ artificial light, all that is requisite is a round flame, either an argand gas-light or a petroleum-oil lamp, a common German student lamp.

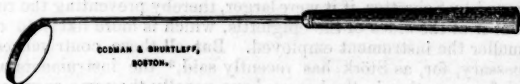
In a flat flame, there is hardly sufficient light. Of course, lenses will increase the intensity of your light somewhat, but are not necessary if you have a round flame. In using it, it should be put near the right ear of the patient, the reflector being worn over the right eye, which should be on a level with the patient's mouth, when his head is properly inclined backward. Having succeeded in illuminating the pharynx, the observer's head should be moved backward



CODMAN & SHURTLEFF,
BOSTON.

* Reflectors and mirrors, such as are described above, are now furnished by Messrs. Codman & Shurtleff of this city.

and forward until the focus is obtained, and then held in position a little forward or backward of this, in order that sufficient rays may be thrown into the larynx to illuminate it throughout its whole extent.



The obstacles with which you may meet, even when using the instruments properly, are:—

1. Excessive irritability of the fauces. Various means have been proposed for overcoming this, one of the first of which was the internal administration of bromide of potassium, which seems to do little if any good; which may be said, also, of the various inhalations which have been proposed, excepting that of a few whiffs of chloroform, just previously to the examination. Sucking bits of ice will also diminish the irritability somewhat. The contact of instruments, however, tends more than anything else to overcome this irritability, and when a patient shows excessive sensitiveness on the first examination, he should be directed in the interval between that and the second (if he is to come again) to touch his own throat as often as possible with a spoon or some other convenient article.

2. The rising up of the base of the tongue, which may be very thick, and so prevent the proper introduction of the mirror.

In these cases, great care must be taken not to pull upon the tongue, nor to touch it with the mirror. In exceptional cases of this kind, a better view may be obtained by not attempting to hold the tongue in the thumb and finger, but by means of a long spatula curved downward at its extremity, passed over the base of the tongue, drawing it forward and downward.

3. Pendency of the epiglottis. When the pronunciation of a high note, "E" for instance, does not raise the epiglottis sufficiently to give a view of the entire length of the vocal cords, it must be raised mechanically. This is best done by means of an ordinary elastic catheter, which is introduced by the right hand, the mirror being held, in this case, in the left. Of course, on the first trials, this will usually be borne only momentarily, but sufficiently long to enable you to catch a glimpse, at least, of the parts below. The larynx seems to be more tolerant of the material of which these catheters are made than of any other. In the earlier period of laryngoscopic operations, it was thought to be necessary or desirable to have some special arrangement for holding up the epiglottis when it was pendant, independent of the operating instrument, and here are three of the contrivances which were devised for this purpose.

Here is the ingenious instrument of Türck, by means of which you can pass a threaded needle through the epiglottis and withdraw it from the mouth, the thread then being held by the patient himself. Here is the instrument of Bruns, a strong spring forceps, with strong teeth, which, having been fixed upon the epiglottis, would hang from the mouth, and by its own weight raise the epiglottis. Here is the little staff of Voltolini, which it is intended that the patient should hold himself. The first two instruments, those of Türck and Bruns,

are not to be recommended, as they are liable to produce dangerous inflammation of the epiglottis and adjoining parts, as has, in fact, already occurred. The little staff of Voltolini, which is, of course, harmless, would answer the purpose for which it was intended much better, as mentioned by Schrötter, if it were larger, thereby preventing the rolling in about it of the sides of the epiglottis, which is more likely to occur the smaller the instrument employed. But all these contrivances are unnecessary, for, as Störk has recently said,* the instruments which we use for operating in the larynx have usually the same curve as the catheter; hence a second instrument is not necessary, the operating instrument itself holding up the epiglottis.

In closing these remarks, I will call your attention to the oil pictures on the wall opposite, both executed by Dr. Heitzman, of Vienna, who has had much experience in work of this kind in the clinics of Türk and Schrötter. The first represents a section of the skull, throat and wind-pipe, when in position for laryngoscopy; the second represents the laryngeal image, as seen in the mirror, the epiglottis being above, and the arytenoid cartilages below, and the other parts in corresponding places. I call your attention to the color of the different parts in health, first accurately described, according to Mandl, by Störk; the laryngeal surface of the epiglottis (which is sometimes traversed by vessels), the cricoid cartilage (seen below the anterior angle of the vocal cords), and the rings of the trachea have the color of the mucous membrane of the eye (or, as it is sometimes described, of boiled salmon), and the arytenoids, the ary-epiglottidean folds and the ventricular bands the color of the gums (the ary-epiglottidean folds often lighter, however). The vocal cords are pearly-white in health. The mucous membrane between the rings of the trachea, more or less of which are usually seen, is of a pale red color.

(To be continued.)

PENITIS.—(*Le Mouvement Médical*, Aug. 31, 1872).—M. Demarquay has recently communicated to the Société de Chirurgie a case, interesting from its rarity, of suppuration of the *corpora cavernosa*. The patient was a man of enfeebled constitution, æt. 38 years, who had had four different attacks of blenorrhagia in the course of the previous seven years. He was admitted to the hospital April 17, 1872. Several weeks prior to his entry, he had had an attack of retention of urine, at which time he had first noticed a small swelling in the perineum, just anterior to the bulb. This swelling was found to fluctuate and was therefore laid open by M. Demarquay, but as the entire tissue posterior to the bulb was thoroughly infiltrated with pus, it was concluded that the abscess had its origin in the mucous follicles known as Cowper's glands. By the first of June, the integument of the penis had become red, tense and painful, the pain being most marked along the lower portion of the organ. On the 5th of June, the organ had attained an enormous volume, being, apparently, in a state of priapism. Death took place on the 10th. At the *post mortem*, the entire central portion of the *corpora cavernosa* was found to be the seat of one large abscess, which had destroyed the septum, extending to the submucous layers of the urethra.

* Volkmann's "Sammlung Klinischer Vorträge," No. 36, p. 269, 1872.

Progress in Medicine.

REPORT ON ANATOMY.*

By THOMAS DWIGHT, Jr., M.D. HARV.

METHODS.

PRESERVATION.—*Report on the Means employed in Medical Schools of Great Britain for the Preservation of Subjects. (British Medical Journal, Oct. 5th and 12th, 1872.)*

This collection of communications from gentlemen connected with fourteen institutions gives much valuable information concerning arterial injections and the preservation of specimens in fluid, in addition to that which relates to material for the dissecting-room. The points to be kept in view in choosing a method are, as is well stated by Prof. Allen Thomson, of Glasgow, "the furnishing of parts for dissection which are, as nearly as possible, of the natural appearance and consistence, and lasting during a period of several months; and, secondly, that the method adopted shall not be inconsistent (as, for example, it is when common salt is employed) with the permanent preservation, in the wet or dead state, of interesting specimens" Several of these institutions lay in a stock of subjects months before they are to be used, and, of course, employ more elaborate methods than do the others. In many cases, the injection is made by hydrostatic pressure, i. e. by drawing the fluid from a reservoir several feet above the subject, and the process is repeated till the subject is filled to repletion. Arsenious acid and bichloride of mercury are each extensively used, but apparently not when preservation for a long time is desired. In Edinburgh, pure malt spirit or methylated spirit of commerce is thrown into the vessels, and also into the cavities of the body, and occasionally after that the body is thrown into spirits. Prof. Thomson prefers a strong solution of arsenious acid combined with alcohol, but has abandoned it on account of a tendency to produce ulcerations on the hands of the attendants. "A solution of corrosive sublimate combined with creasote and glycerine and methylated spirit" has, of late, been used in its place, but is not very highly praised. Dr. Millen Coughtrey (of the Liverpool Royal Infirmary School of Medicine) strongly favors a solution of one drachm of corrosive sublimate in thirty ounces of methylated spirit. He thinks that among other advantages it has that of making the fluids of the body less virulent, and of greatly lessening the danger of dissecting wounds. Its disadvantages concern only the injectors, who, by carelessness or excessive use, may experience "slight physiological effects of mercury." Dr. Coughtrey thinks that the preservative effects of solutions of carbolic acid, both in water and spirits, are evanescent. This agent is used, however, in other schools with excellent results. The experiments of Mr. Howse, of Guy's Hospital, with glycerine and arsenious acid were mentioned in our last report (Sept. 5th, 1872). He has substituted carbolic for arsenious acid with advantage, and uses inferior glycerine instead of the best. He has also reduced the quantity from three to two gallons, and hopes to reduce it much further. After injection, the subject is put into a coffin and packed in sawdust moistened with a saturated solution of

* Second Semi-Annual Report.

carbolic acid in water. The results are very good after several months. Paint injections appear to be most used for showing the arteries, and wet preparations are almost universally preserved in alcohol or methylated spirits. It is disagreeable to observe that in some English schools the methods are kept more or less secret; a course disgracefully prevalent on the continent.

ANATOMICAL PREPARATIONS.—*De l'Embaument chez les anciens et chez les modernes, et des Conservations pour l'étude de l'Anatomie.* Par J. P. Suguet.

This work contains an account of the methods of embalming, from the earliest times, and of the author's researches in this branch. At the end, there is a chapter devoted to anatomical preparation, from which some extracts may be of interest. Bones, after the grease has been removed, should be whitened by being dipped into a weak solution of sulphurous acid as often as is necessary, allowing them thoroughly to dry between each immersion. There is no information given as to the length of the process.

Preparations of the muscles may be made by injecting the main artery supplying the parts with a strong solution of albumen, to which is added one-quarter as much of a solution of arsenic acid of 15° (Baumé). Enough should be used to distend the tissues thoroughly, so that the muscles may appear larger than they are. The fluid will soon harden into a gelatinous mass, and in two days the part may be dissected. To keep the preparations free from the grease of the bones, a small hole should be drilled into them and the cavity injected with a very hot solution of stearine, which raises the point of fusion of the marrow. The parts are then put into the desired position and dried, by which they lose their color but retain their size and relations. The fibrous parts may then be whitened by the process just given for the bones, but the muscles must be artificially colored. Similar dry preparations may be made of the viscera by injecting with the same fluid and leaving them for two weeks in a bath of chloride of zinc at 40° Baumé, and, in some cases, repeating the injection during that time. The brain may be treated in this manner, but it will lose some of its size; it may then be whitened over a bath of sulphurous acid.

METHODS FOR MICROSCOPICAL PREPARATION.—*Technique Microscopique.*

Par Grancher. *Robin's Journal*, Nov. and Dec. 1872.

Eine Einbettung's Methode. Von Dr. W. Flemming *Schultze's Archiv*, Bd. 9, heft 1.

Die Untersuchung's Methode des Centralnerven—Systems des Menschen. Von Prof. W. Betz. *Shultze's Archiv*, Bd. 9, heft 1.

Though containing nothing very new, Grancher's paper gives very clearly some points which it is important to remember in staining with carmine. The affinity of any part or tissue for carmine is in a direct ratio to its vitality; thus, cellular tissues are deeply colored, and the nuclei more so than the other parts of the cells. He writes that maceration in alcohol and desiccation assist coloring, while maceration in chromic acid or bichromate of potash, has the opposite effect.

The evidence, however, of the majority of observers is that if the sections be of proper thinness the effects of these reagents can be destroyed by soaking in water, to which Max Shultze recommends that a small piece of camphor be added in Summer to prevent the appearance

of infusoria. Betz considers carmine the best coloring agent for the central nervous system. According to Grancher, specimens may be stained in two colors by a mixture made by pouring a little of a saturated solution of picric acid into a weak solution of carmine. The latter will affect the most active elements, as the nuclei, while the former will be more general in its action. The results are said to be superior to those obtained by carmine alone. Dr. Hertwig, in a paper on elastic cartilage (*Schultze's Archiv*, Bd. 9, heft 1), gives another method for double staining. After carmine has been employed, any excess of it should be precipitated by acidulated water, and then the specimen left for many hours in a very dilute aqueous solution of aniline blue. Writing of its effects on cartilage, he states that the cells become red, the elastic net-work blue and the ground substance remains uncolored.

Dr. Flemming's method of "imbedding" specimens of which sections are to be made has one great advantage over those at present in use. Gum or a mixture of wax and oil are commonly employed, but have the defect of being opaque so that the investigator cannot know precisely in what part of the specimen he is working. Dr. Flemming uses transparent soap, that containing no glycerine preferred, which can be dissolved, with a little heat, in one-third or one-half of its bulk of spirits of wine. The solution should be filtered and kept in a closed bottle till needed. It is solid when cold, and perfectly transparent.

Prof. Betz gives a minute account of the way in which he prepares the central nervous system for examination. The *pons*, *medulla* and *cord* may be treated in one piece. This is suspended in spirits of 75 to 80 per cent. rendered light brown by iodine. In from one to three days the *pia mater* may be removed, but the specimen is kept in this solution till it is infiltrated with iodine, which occurs within six days. Fresh iodine is added as the fluid becomes less colored from its absorption.

The specimen is next put into a three per cent. solution of bichromate of potash till it hardens, which is indicated by a brownish precipitate. It is then washed and kept permanently in a solution of about half the strength of the last. It is a curious fact that the roots of the dorsal nerves must be removed, while the cervical and lumbar ones may be kept.

The cerebellum is the most difficult part to prepare; it must be very fresh and must be supported by cotton-wool. More iodine must be used, and the potash solution must be five per cent. The brain is cut in halves and treated in very nearly the same way. The sections are made with a razor which is convex above and concave below, and at least half as broad as it is long. It should not only be wet before using, but drops of water or spirit should continually fall upon it while the cut is making.

ANOMALIES.

A Catalogue of Muscular Anomalies in Human Anatomy. Alex. Macalister. *Trans. Royal Irish Academy*, vol. xxv.

Tricælian Human Heart. By S. Messenger Bradley. *Brit. Med. Jour.*, Jan. 11th, 1873.

Note sur les Lobes surnuméraires du Poumon Droit de l'Homme. By Pozzi. *Revue d'Anthropologie*, 1, 3, 1872.

- Gruber (*Bull. de l'Acad. Imp. de St. Petersbourg.*)
Sur un Muscle Tenseus de l'Aponeurose rural partant du Demi-tendineux ;
Sur quelques Variétés du Muscle Palmaire Grêle ;
Sur un Muscle Biceps Humeral, ayant une portion coracoïdienne et une portion humérale, anomalie à la place de la portion glénoïdienne ;
Un Muscle radial interne long bicaudé chez l'Homme, remplaçant par une portion surnuméraire le Palmaire Grêle, qui manque ;
Sur les Variétés du Muscle Radial Interne Court ;
Sur un Muscle Costo-coracoïdienne, surnuméraire chez l'Homme ;
Sur les Os du Carpe surnuméraire chez l'Homme.

Gruber gives some new cases of supernumerary carpal bones, and a résumé of his previous writings on the subject. He has shown that the bones may be the result of subdivision of some of the normal carpal bones, or merely distinct parts of the second and third metacarpals (especially the latter), or may very rarely be abnormal sesamoids of the back of the hand; or, lastly, may truly represent the "centrale" of comparative anatomy—a bone situated between the two rows. He claims to be the first who has recognized and described a case of the last kind.

It seems advisable to postpone the discussion of muscular variations, as the last volume of the publications containing Macalister's catalogue has not been received here. The most interesting of Gruber's papers is that on the "short internal radial" (the flexor carpi radialis brevis, or profundus of Wood), an abnormal muscle arising from the radius under cover of the radial flexor of the wrist. He has collected twenty-two cases described by himself and others, and finds that there are three varieties, according to its insertion, which is most commonly on the carpus, but may be on the metacarpus, or on both. The muscle may have a head from the ulna.

Pozzi describes an extra lobe of the right lung, coming from the lower portion and projecting to the left behind the heart. He calls this the "lobulus impar," as it corresponds to the lobe of that name found in many mammals; thus it is of a very different nature from an extra lobe at the top of the lung, due to the irregular course of the vena azigos.

The most remarkable anomaly is the tricœlian, or three-chambered, heart. It was from a child, who lived fifty-four hours, and apparently well for the last half of the time. It consisted of a ventricle, without any trace of a septum, communicating with the right auricle. The left auricle was very small, and opened into the other, but not into the ventricle. There was but one artery leaving the heart, which gave off two pulmonary arteries. The relations of the auricles and the pulmonary and caval veins were perfectly normal; but of course the blood from the lungs must have been mixed in the auricle with a much larger amount of non-aërated blood. Mr. Bradley considers this malformation the result of arrested development at about the ninth week.

OSSEOUS SYSTEM.

- L. LEVSHIN.—*Sur le Developement du Tissu Osseux dans les Extremités Diaphysaires des Os longs chez les nouveaux-nés.*
 The same.—*Sur les Vaisseaux Sanguins Terminaux dans les Cavités Médullaires Primitives des Os longs, et sur leurs Noyaux Capillaires chez les Nouveaux-nés.* *Bull. de l'Acad. de St. Petersbourg*, Vol. 17, No. 1.

In these papers the author gives the results of his studies on two questions: First, is the medullary tissue of a long bone in process of development dependent upon the proliferating cells of the cartilages of the ends of the diaphysis; and second, how do the terminal blood-vessels of the medulla behave at this period? It should be understood that the author does not refer to the epiphyses but to the plates of cartilage closing the ends of the central cylinder. In regard to the first point, the author holds that these cartilages play no active part in the process. The cartilage cells are arranged in rows and so close together that the ground substance has the appearance of a net work of bars running in two principal directions. Now the transverse ones atrophy (apparently under the pressure from the vascular loop of the encroaching medulla), while the longitudinal ones remain to support the bony tissue and thus give the well-known appearance of the cancellated structure of the ends of the long bones. In the second part, he shows that the very minute capillaries of the growing medullary cavity are arranged in loops at its ends. The calibre of these loops is greater than that of the vessels going to form them. The walls are not regular, but present projections of various sizes, particularly in the loops. The appearances indicate that the prolongation of the medullary cavity, if not due to, is, at all events, accompanied by great activity of the vessels near the ends. Though but rarely, the author has seen grounds to infer that the walls of the capillaries were formed from spindle-shaped cells.

Dr. Wollfermann contributes an article to Reichert and DuBois Reymond's Archives [1872, heft 3], on the architecture of the bones. By means of numerous sections, he has studied the structure of the bones of man and many animals, and shows that the arrangement of the trabeculae always presents some practical mechanical advantage.

The Sesamoid Bones in Man. By Dr. Gillette. *Jour. de l'Anat. et de la Phys.* Robin. Sept. and Oct. 1871.

The author thinks that these bones deserve more attention than has been given them. They are usually tersely described as small, round bones in tendons. He divides them into peri-articular and intra-tendinous, and is inclined to regard the latter as of accidental formation, owing to friction. Those about the joints are the most important, and the author enumerates many that are but rarely observed. He dwells particularly on the way in which they modify the joint at the distal ends of the first metacarpal and metatarsal bones. The sesamoid bones of this particular kind give protection, solidity and mobility to the joints; they change the direction of forces and give greater power to muscles inserted into them. Dr. Gillette does not consider either the patella or the pisiform as sesamoid. The only reason which he gives for excluding the former is that it is seen well formed in the embryo at a time when the acknowledged sesamoid bones are barely perceptible, for which, one would think, its greater size would sufficiently account. He thinks that the pisiform is as much a part of the carpus as the calcaneum (to which it pleases him to say the pisiform corresponds) is of the tarsus. This view is entirely at variance with the teachings of comparative anatomy; but if we consider merely the human body, there can be no doubt that the pisiform is much more like a sesamoid than like anything else.

MUSCULAR SYSTEM.

Ueber das Verhältniss von Nerve und Muskel. Schultze's Archiv., Bd. 9, heft 1.

The chief object of this paper is to show the numerical relation between muscular and primitive nerve fibres. This was studied on the orbital muscles. The muscular fibres were counted in a transverse section through the middle of the muscle, and the nerve tubes in one as near the entrance of the nerve as possible. The average proportion of nerve tubes to muscular fibres in the eye muscles of the sheep is as follows:—

In the superior oblique	1 nerve fibre to 6 or 7 muscular ones.
" " inferior	" 1 " " " 3 " 4 " "
" " " rectus	1 " " " 7 " 8 " "
" " external	1 " " " 10 " "
" " internal	1 " " " 8 " "

(For particular reasons the superior rectus is thrown out.)

This gives a general average of 1 to 6-7, but in the human orbit the proportion of nerves is even greater, being 3 to 7 muscular fibres. It is remarkable that both in the sheep and in man the external rectus has the smallest proportion of nerve fibres, as in the latter, at least, no muscle has a relatively larger nerve. (Rüdinger.)

Tergast does not accept the general view that the proportion of nerve tubes to muscular fibres increases with the higher position of the animal among the vertebrates, but holds that it depends upon the importance of the muscle. Thus, in the sartorius of a young dog, the proportion is 1 to from 40 to 60; but in the frog, in which the sartorius is greatly used, it is 1 to 16½.

The author finds in the orbital muscles that, with some exceptions, the nerves form coarse and fine plexuses, and are distributed throughout the muscle, having numerous terminations. Kühne, however, holds that in every muscle there are tracts where no nerve is to be found. The amount of labor involved is prodigious, as there are thousands of fibres of each kind to be counted in every muscle. The number of observations is, as may be supposed, somewhat limited, and it may be doubted if the figures are very reliable, as the individual variations are very great. Thus, in one case the obliquus superior had 2260 nerves to 8080 muscular fibres, while in two others there were only 1756 and 1710 to supply 15,385 and 17,658 respectively. The proportion in the eye muscles of the frog is given as 1 to 10, which is apparently obtained by taking the average of the following results of four observations, 1 to 3, 1 to 4, 1 to 13, and 1 to 21. There is another consideration which throws even more serious doubt on this work, namely, the difficulty of recognizing with any certainty the finest nerve fibres when seen only in transverse section.

The most valuable part is the appendix, in which the discovery is made public that the fibres of the eye muscles branch and anastomose like those of the heart.

Gillette writes, in *Robin's Journal*, Nov. and Dec., 1872, on the muscular coat of the œsophagus in man and animals. He divides the muscles into proper and accessory ones. The former come from the pharynx and cricoid cartilage, the latter from a number of neighboring parts. Special attention is given to the fibres coming from the dia-

phragm. The only new point of any importance which we find in this monograph is concerning the nature of the fibres. It is universally held that the striated fibres gradually diminish in number from above downward, and that organic muscular fibres take their place; but Gillette states that in the upper part of the œsophagus there are only striped fibres, only unstriped ones in the middle, and both in the lower, though the organic are in excess.

A thorough investigation of the subject will be necessary to establish these views in the place of Klein's admirable article in Stricker's Handbook.

Schagdenhauffen publishes an article in the same journal (Sept. and Oct., 1872) on the mechanical principles involved in certain motions of flexion and extension of the forearm.

(To be continued.)

A CASE OF CHLOROFORM POISONING. RECOVERY.—(*Deutsches Archiv f. Kün. Med.*, 10 Band, 3 heft, 1872).—A laborer, desiring to have a deep-seated abscess laid open, was directed to purchase an ounce of chloroform on his way home. One hour afterward, the surgeon repaired to the patient's residence and found that the chloroform had all been swallowed. When questioned, the man said that the dose had burned his tongue a little, but that he now experienced no ill effects except a desire to sleep. An emetic was at once ordered, to be followed by large draughts of milk. After a short absence, the surgeon returned and found the patient plunged in deep sleep. There was a complete loss of sensibility, and no response to any stimulus applied to the muscles, so that there was no difficulty in laying open the abscess. Respiration was now quiet and regular, the pulse full, slow and regular; the atmosphere was loaded with the fumes of chloroform. Vomiting had not yet taken place. There seemed now to be danger that the chloroform would produce some injury to the mucous membrane of the stomach, more especially since, on account of the original trouble, no food had been partaken of for several days. The patient now lay plunged in deep sleep for the next eight hours; signs of returning consciousness were then noticed, although two more elapsed before he became fully aroused. Violent vomiting now set in, and large quantities of a watery fluid were brought up, having a very decided odor of chloroform. After the vomiting ceased, he expressed himself as feeling quite as well as ever. The man had been addicted to the use of alcohol, which may, perhaps, account for the extraordinary circumstance that chloroform, which acts so readily upon the external surface of the body, produced in this case no appreciable ill effects upon the lining membrane of the stomach. It would appear from the above experiment that chloroform, when introduced into the stomach, acts more slowly, but in the end more powerfully than when inhaled.

DIAGNOSIS UNDER DIFFICULTIES.—The idolators of beauty, the Chinese, are forever at the feet of beings whom they adore. When any of their wives are indisposed, they fasten a silken thread around her wrist, one end of which is given to a physician, and it is only by the motion which the pulsation communicates to it that he is allowed to judge of the state of his patient. This precaution of jealousy is almost unique in its kind.—*Med. and Surg. Reporter.*

Reports of Medical Societies.

THE BOSTON SOCIETY OF MEDICAL SCIENCES. E. WIGGLESWORTH, JR.,
M.D., SECRETARY.

Oct. 29th, 1872.—The Society met at the house of Dr. Jeffries, Dr. Wadsworth in the chair.

Hæmatoxyline as a coloring Agent for Microscopic Specimens.—Dr. Quincy showed, under the microscope, some specimens prepared with hæmatoxyline, and asked the experience of others in regard to it as a coloring agent.

Dr. Wadsworth had found it preferable to carmine in showing capillaries and in bringing out inflammatory appearances, but hardly so good for nerve tissue.

Dr. Dwight thought that in the specimens exhibited, the nerve tissue showed better than with carmine.

Dr. Fitz had employed hæmatoxyline in the preparation of specimens previously subjected to chromic acid and alcohol. It brings out the cells in the tongue and kidney better than carmine. After twenty-four hours in a dilute solution, the cells are more sharply defined, while the intercellular tissue is not colored and may be afterwards treated with carmine. But the preparations seemed less clear and more liable to break up than carmine preparations.

Dr. Quincy thought that this sediment might be avoided by coloring to excess and then washing. He could not say that time would not turn the preparations darker.

Dr. Fitz said that with very thin sections, washing often removed blood corpuscles or other parts. He had found solutions with a certain depth of color to become darker after standing twenty-four hours. The nuclei especially of cells are better shown by hæmatoxyline than by carmine. Epithelial specimens are beautifully colored, almost like gold preparations, the nucleus and border distinct and purple.

Dr. Wadsworth had not had the same experience with the epithelium of the eyelids.

Dr. Fitz's experience had been confined to the epithelium of the tongue. Hæmatoxyline had another advantage. It colors, when concentrated, very quickly, that is in three to four minutes, and cell nuclei certainly were more rapidly colored by it than by carmine. A strong solution is made with alcohol and water.

Dr. Arnold had found that his preparations thus treated remained in good condition after a lapse of two years.

Drs. Dwight and Wadsworth confirmed Dr. Fitz's experience in regard to the nuclei.

Dr. Quincy regretted being obliged to use gas-light for the exhibition of the specimens, as they lost greatly thereby.

The Chigoe.—Dr. White exhibited, under the microscope, a specimen of chigoe or chique, found in tropical countries, and causing, by boring into the hands and feet, necrosis, chronic ulcers and gangrene of these parts, often necessitating amputation. There is but little accurate knowledge with regard to this animal. It resembles a common flea, though smaller, and its proboscis is from six to eight times as long, being, in fact, as long as its body. The female alone is said to

be parasitic, in order to perpetuate the race. It bores into the lower layers of the epidermis and remains an indefinite and unknown period. Its presence then becomes apparent from the itching or smarting occasioned, and a freckle appears which, in a few days, becomes a prominent, pearly blister, rising above the skin, and we look through the epidermis upon the swollen abdomen of the animal, full of eggs which are rapidly developed. The head and feet are doubled up under the belly. According to some, larvæ are produced, but for this there is no certain authority. If the animal is left undisturbed, the eggs pass out of its abdomen and appear upon the skin like the itch insect. Their future development is unknown, as they fall off into the sand, straw, &c. The mother then shrinks and is discharged with the epidermis, by desquamation.

This specimen shows a large number of eggs and a portion of the animal. It was removed in 1869, by Dr. Forster, of Charlestown, from the foot of a gentleman who had just arrived in Paris from Brazil, where he had spent the three previous years. The length of the voyage goes to show that the development of the process is not a very rapid one. The proboscis and a part of the legs are well shown in the specimen. A portion of the cephalic and median segments is therefore the part here exhibited. None of the eggs showed embryos and very few segmentation, proving either a very long period of development or long intervals between the separate developments. After the animal has been some time in the skin it is said to establish an arterial circulation in connection with that of its host, the two diastoles and systoles being synchronous; whether it be by the attachment of its proboscis to an artery or not is uncertain.

Dr. Fitz asked the usual rate of pulsation in insects of that size.

Dr. White could not say, but added that the large body of the animal could be easily watched with a lens and thus show whether or not its circulation was synchronous.

New Method of obtaining Illustrations from Stone or Metal—Dr. Quiney explained the method employed by him to obtain lithographic drawings. A glass plate is first covered with a film. A drawing by means of tracing paper and red chalk is transferred upon the film in reverse. The plate is then placed upon a black cloth and by means of any steel point the drawing is made upon the glass by scratching away the film, the object of the black cloth being to make the lines more distinct. Lines of almost any degree of fineness can thus be made. By lifting and turning the plate to the light, the drawing can be seen as it will appear when printed, and also compared with the original drawing and more easily corrected.

Much labor may be saved in this first process, particularly if the drawings are to be diminished or enlarged, by having a negative picture made at a photographer's and transferring it directly to the glass plate without the use of tracing paper.

Messrs. Osgood & Co. transfer the drawing on the plate to a lithographic stone, the shading is done with the lithographic crayon, and the prints struck off in the usual way.

This glass plate method is somewhat different from that taught in Vienna by Dr. Heitzmann. A lithographic stone is prepared with a black surface, and the drawing transferred in the same way as on the glass plate. The lines are then made by means of a steel point in the

stone. The time occupied in making such drawings as those in Dr. Warren's Essay on Rodent Ulcer by this method would require one week for each. The time required in making each on the glass plate was one day, thus saving much time, labor and expense.

Another very great advantage is that the glass plate can be laid aside and a stone prepared for printing at any future time, thus avoiding keeping a stone unused as well as saving the difference in space between the size of the two.

From the glass plate drawing a metal plate can be made to print with the text.

Messrs. Osgood & Co. are now prepared to make plates or prepare lithographic stones directly from clear drawings made upon Bristol-board with black ink.

The cost of the metal plates is forty cents the square inch.

In reply to Dr. White, Dr. Quincy said that direct photographs of microscopic specimens could not be so well used, since everything was represented upon the same plane.

Dr. Blake mentioned that the photographs in Rüdinger's Atlas of Sections of the Eustachian tube were perfectly clear and good.

Dr. Dwight said that these were, however, for very low powers; e. g. fifteen diameters.

Through the politeness of Dr. N. Thomson, of Philadelphia, in sending to Dr. B. Joy Jeffries his apparatus for demonstrating and using Scheiner's test in the selection of glasses for myopia, hypermetropia and astigmatism, Dr. J. was enabled to exhibit and explain the experiment and its very practical clinical use.

TRAUMATIC RUPTURE OF THE INTESTINE.—(*Vierteljahrsschrift f. Gericht Med.*, Bd. xvi. H. 2).—Dr. Laudahn reports a case in which an idiot, an inmate of the Göttingen Insane Asylum, received a kick from a fellow-patient in the right groin, directly above Poupart's ligament, the only visible effects of which was a slight contusion. Complaint was made, however, not long after, of pain in the abdomen, and it was found upon examination that the injured part was extremely sensitive to the touch. The patient soon became restless and anxious, and, twelve hours after the reception of the blow, died, with the usual symptoms of collapse. There was no vomiting after the injury; no movement of the bowels, nor were there any indications of meteorismus. The autopsy revealed the presence of ingesta in the abdominal cavity, an abundant exudation covering the folds of the peritoneum, and miliary tubercles in the spleen and liver. Finally, a perforation was discovered in a loop of the small intestine (ileum), found lying in front of the spinal column, immediately above the sacrum. The perforated spot had the appearance of a line, five mm. in length, running parallel to the long axis of the intestine. No other injury to the intestine could be discovered. This case is remarkable from the fact that a blow so light as to produce but a slight injury to the superficial integument, should cause a rupture in a portion of the intestine removed by a considerable distance from the direct seat of the blow, the intestine not being distended at the time with food. Cases of traumatic rupture of this kind are, as a rule, the result of a violent force applied to the abdominal wall, when the intestine is filled with food, or else it is found that the injured organ has been weakened by some pathological change.

WINGED MEN.—A very ingenious pseudo-scientific article has recently appeared in the *Révue des Merveilles Scientifiques*, purporting to be from the pen of M. Harnois-Condamine, a professor of physiology, and as it apparently corroborates the theory advanced by Mr. Darwin, it has stimulated a great variety of speculations and criticisms on the part of the French journals. The article in question begins with a descriptive sketch of a family living in Auvergne, the members of which are all remarkable for certain abnormal anatomical developments, consisting of greatly enlarged muscles of the trunk and upper extremities, combined with abnormally large clavicles and scapulæ, and a pigeon breast. A careful examination, *post mortem*, was made of one of this family who died lately, and the detailed results of this autopsy are recorded with an unnatural minuteness and accuracy. The dissection of the region of the shoulders appears to have been the most startling in its results to those present. The clavicle was found to be long and nearly straight, and at least a third larger in diameter than the corresponding bones of the largest men. The scapula was bounded by layers and bundles of large muscles, and was nearly twice as long as the average scapula, being also thicker and rougher on the edges than is usual. The sternum extended to within half a decimeter of the umbilicus, and was more than proportionally widened. The pectoral and intercostal muscles were enormously developed, especially the intercostales interni. The reader is artfully left to infer that these abnormal appearances all point in one direction, indicating a new departure towards another type; that is to say, the evolution of a new species furnished with wings. The lengthening of the scapulæ and clavicles, the very great enlargement of the pectoral, dorsal and abdominal muscles, all these circumstances, he argues, concur in indicating a change from the human and toward the bird type. He proceeds to unfold the principles upon which this evolution may actually be accomplished, and expresses the opinion that this new race may possibly be developed within the present generation. With the view of ascertaining how far these abnormalities were really transmitted in the different members of this family, the writer examined a young son of the deceased, and had the satisfaction of finding the frame and muscular development of this last descendant to be the counterpart of the father. What is most striking of all, however, several new features were discovered, indicating that the son had approached nearer by several degrees to the bird type than the father. These new abnormalities are described as rudimentary *third eyelids*, and what bore a close resemblance to *rudimentary wings*, the latter consisting of a triangular flap of skin, forming a continuous connection between the upper portion of the arms and the back.

With the exception of one or two blunders indicative of an imperfect acquaintance with pathology, the article is very skilfully put together, so as to deceive completely the general public, for whom it is intended, and is strongly suggestive of a somewhat similar hoax once perpetrated by our countryman Mr. Poe.

PATHOLOGY OF PEARLS.—According to the *Lancet* those pearly concretions found attached to the inside of mussel shells, and generally attributed to Nature's method to relieve the irritation of foreign bodies, have been found by Mr. Garner to be due to the presence of minute entozoa (a species of *distoma*) in sea-shells, and an acarus (*Atax*), or itch insect, in fresh-water mussels.

Correspondence.

FROM BERLIN.

MESSRS. EDITORS,—Berlin is crowded to excess this winter, and the high price of lodgings in consequence, has driven a considerable number of students from the University to smaller places. There are still something over 2000, and in the medical department the clinics are all well attended. The number of American students is not large, perhaps a dozen, as Vienna still offers greater attractions in the way of short, private courses.

But it is here a very mild, unhealthy winter, and the amount of interesting material at the Charité was never greater. At the Pathological Institute, Virchow has much more than he can dispose of in the two mornings in the week on which he lectures, and he as well as his assistants, appear to be so hurried, that one is not likely to receive much individual instruction in the laboratory; so, apart from the great number and variety of morbid specimens to be seen here, a smaller university, say Leipzig or Wurzburg, would, perhaps, afford better opportunities for pathological and microscopic studies.

The same is not true in the clinical department, and the variety of cases exhibited, by Frerichs especially, and his powers in differential diagnosis, make his clinic at present unequalled by anything in Germany. Much as we hear of the superiority of German medical education, and unquestionable as it is in some respects, the students who are called up at these clinics make a pretty poor show. For, either from over-awe of the professors or ignorance, they rarely make the diagnosis, though they always have an opportunity of examining the cases before hand, and are frequently unable to answer questions which one of our third year's students would be apt to know. However, the professors seem to take considerable satisfaction in solving their own conundrums, and from long experience do it very well.

This winter, there is a severe epidemic of relapsing fever (famine fever, typhus recurrens), which is also now prevalent in London, and the same which visited New York a year or two ago; characterized by repeated occurrences of high fever at intervals of several days, during which the temperature is normal. Enlarged liver and spleen, frequently with chest complications, sometimes suppuration of the parotid gland and internal otitis. Persons attacked are usually debilitated from want of food. The mortality in the New York epidemic was small, 2 or 3 per cent. Here, it is greater, about 8 per cent., much the same as in typhoid, which is also fearfully prevalent this year, perhaps owing to the wretched drainage.

In the treatment of both diseases, much reliance is placed in cold water baths, an addition to rational therapeutics, in febrile affections, which after ten years of trial, appears to be now pretty generally adopted throughout Germany; but I have never heard of its being fairly tested in American hospitals. Under this treatment, the rate of mortality in typhoid is stated by different observers at from 3 to 8 per cent, while with us it is probably not less than 15, a difference which can hardly be due to our having a severer type of the disease to deal with, as the death rate was formerly much higher here.

Without entering too much into details, the method of administering baths is as follows: Whenever the temperature rises to 103° F., the patient is put into a bath at about 90°, and cold water added until the temperature of the bath is reduced to 70° or thereabouts, the patient remaining in the water until chilled, usually a quarter of an hour or more. At the same time water at a temperature of 50° may be poured over the head and shoulders every two or three minutes, and the patient is rubbed with the hands. In the cases of delicate persons, old people and children, the temperature and duration of the baths are modified, and sometimes they are omitted.

As the baths are repeated from 4 to 6 times daily, oftener if necessary, the treatment is troublesome, and requires the constant attention of a certain

number of well-trained and reliable hospital servants, which would perhaps be the greatest difficulty with us. The chill which follows the bath in some cases does not usually require any interference and soon passes off, but undoubtedly there are instances, though rare, in which the temperature falls below the normal standard, and apparently the patient does not rally from the depressing effect of the bath. But, if the fatal result in typhoid fever is due, in most cases, to the exhaustion attending the long continuance of an abnormally high bodily temperature, also that more than 50 per cent. of the cases in which the temperature rises to 106° , and all in which it goes above 107° , die, and, at the same time, a cold bath reduces the temperature two or three degrees, without ill effects in the vast majority of cases, then there is some ground for the enthusiastic statement of Dr. Brand, of Stellan (who first advocated the cold water bath treatment in a monograph on the subject in 1861), that quinine is no more a specific for intermittent than cold baths, properly regulated, for typhoid. Dr. B. reported 170 cases in 1868, with no deaths.

It should be stated, also, that during the intervals between the baths, cold compresses, frequently changed, are applied to the breast and abdomen, and ice-bags to the head. With regard to diet, stimulants, &c., the treatment is the same as ours.

When typhoid fever is such a scourge as it is with us, and there is a reasonable probability that any modification of our method of treatment would make a considerable difference in the proportion of deaths, it is certainly worth trying; but it takes a long time to try such a system thoroughly, with a view to comparative results, and it can only be done in hospital wards.

It is not so easy to see the advantage of the empirical use of mercurials still so customary in many diseases. For instance, what is the indication in cerebro-spinal meningitis, which calls for mercurial inunctions every two hours? I ask for information, as I had never heard of it before, but the case got well.

Dislocated hips are still reduced by the old method with pulleys, but Hirschwald is soon to publish a German edition of Dr. Bigelow's work.

Hartnack is making his microscopes at Potsdam, but there are one or two other makers now recommended as cheaper and equally good. For 42 thalers, one can buy an excellent instrument, magnifying up to 500 diameters, and they are in very general use.

Yours truly,

....

Berlin, Jan. 25th, 1873.

CAUSATION OF DISEASE.

MESSRS. EDITORS.—If we may believe the *London Medical Times and Gazette*, the theory that "typhoid fever might originate with filthy air and water *de novo*," is about abandoned in England, while another theory that it "depends on a special organic poison, as much a poison *sui generis* as that of smallpox or syphilis, and that without the introduction of that poison the fever does not arise, although water, air and surroundings may be all contaminated with impurities, and may offer the most favorable conditions for its reception and spread," is continually receiving new strength. The idea that the "special poison" is cast out of a patient in the dejections and taken into the stomachs of others in drinking-water, is almost too much for full credence, though it is said that "the direction in which the evidence points is unmistakable." As an instance of this evidence, it adduces a second case in a house where a patient died four weeks before; and asserts that "the interval that elapsed between the first and second cases is reasonably accounted for on the supposition that the excreta of the young woman who brought the disease had escaped from the privy, and, percolating the soil, had found a way into the surface well."

What would be thought of a court of justice that relied upon such "evidence" as this?

Another instance of "hasty conclusions from scanty premises" appears in the same journal from a report, the week before, of Government Inspector

Ballard, who "stated that there could be no doubt that the fever had been imported to Moseley by the use of polluted milk supplied from Balsall-heath. The pollution might have arisen through a person suffering from the fever using a water-closet on the premises of the milkman. He advised the Board to appoint a medical officer of health." Why not abolish water-closets and sinks, and cork up the patients, as was once advised in cholera cases!

The following remarks, from the *British Medical Journal* of the same date, on the Influence of Rain on Health, are recommended to the thoughtful consideration of those who are so ready to rush to such secondary causes of disease, no matter how far-fetched.

"Even that terrible exotic epidemic, cholera, makes less mark in the annual mortality returns than many of us imagine. If we compare the annual average death-rate of England, which is 22.3 to every 1,000 persons living, for the last thirty-three years, from 1838 to 1870, with that of individual years, we shall find that the cholera years do not so far outstrip some other epidemic years as the gigantic numbers recorded during the epidemic would lead us to expect. For instance, in 1847 the death-rate was, of males 25.4, of females 23.8. During the cholera years, 1848-49, it was 24.8 in males and 23.3 in females, actually showing a mean mortality ($=24$) less than before the invasion of the epidemic. Again, the cholera year 1854, when the death-rate was, of males 24.4, of females 22.7 ($=23.5$), has been surpassed by other years—for instance, by 1864, when the death-rate equalled 23.8. Thus it will be seen how little dependence ought to be placed on the annual returns when estimating the effect on the public health of any excess or defect either in rain, wind, temperature, thunderstorms, or any other sub-aerial meteor."

X.

MESSRS. EDITORS,—Allow me to assure Dr. Cotting that I had no difficulty in understanding his article and fully appreciating the philosophy of the cure. His description was clear and definite, and I usually understand what I read. I did not intend to deprive him of the credit which is his due; but only to say what my experience with the identical operation had been. I confess, however, that, after ample experience, I fail to see the *barbarity* of removing one quarter of the width of the nail and matrix; it is accomplished by as delicate dissection as that which removes "all the diseased parts together with quite a large piece of the sound flesh, skin deep, from the side of the toe." It heals, also, as quickly. To call it "barbarous practice" is simply absurd.

Chicago, February 11, 1873.

MOSES GUNN.

MESSRS. EDITORS,—In the Boston Medical and Surgical Journal, April 11, 1872, I gave an account of Mrs. H., who had used in the four years ending Feb. 14, 1872, 24 ounces of morphine sulph., by hypodermic injections. In the year ending Feb. 14, 1873, there has been injected under the skin of this lady five and three eighths ounces of morphine sulph. I cannot see that her condition has changed from what I stated last year.

Cambridge, Mass.

ROBERT M. OTIS, MD.

NEW REMEDIES AND THEIR VALUE.—The *Pharmaceutical Journal* of January 4 summarizes the therapeutic novelties of the past year as follows: "Cundurango has rapidly declined in favor, and a recent report is very unfavorable as to its value in cancerous affections. Eucalyptus, samadera bark and kokoon bark, koegood, boldo, vandellia, diffusa, guarana and Japanese wax, Dugong oil and bullock's blood, xylol and sulphhydrate of soda, monobromide of camphor, picrate of ammonia, and aconitine and digitaline in a crystalline form, may all be classed under this category. Phosphorus has received an unusual share of attention of late. Combinations of oleic acid with metals have also been recommended. Interesting and favorable reports have been published of the cultivation of cinchona in India, Jamaica and Java, and of ipecacuanha in India; while another Indian grown drug, opium, has now to compete with that grown in China, Persia, Australia and the United States."

Medical Miscellany.

THE population of Italy is increasing at a satisfactory rate. At present, France is the only country whose population is not on the increase. A nation becomes impoverished by remaining stationary.

IN BERLIN, the *cigar ends* usually bitten off and thrown away are collected and sold to snuff makers. Last year 800 pounds of tobacco were thus collected, and the proceeds distributed among 30 orphan children. It takes 6000 ends to make a pound.

CAMEL-HAIR BRUSHES FOR THE CLEANSING OF WOUNDS.—At a recent meeting of the Clinical Society of London, Mr. Callender brought to the notice of the Society the methods he had adopted in his wards at St. Bartholomew's for the dressing of wounds. By the use of brushes, the cleansing of a wound is not a painful process. A further recommendation is that the employment of sponges and other materials commonly used for cleansing wounds, and which some surgeons believe to be a frequent cause of the passage of infectious material from one patient to another, is thus done away with.

FACTORY LEGISLATION IN FRANCE.—*The Lancet*, Feb. 7, 1873, states that in the Corps Legislatif it has been carried that no boy under thirteen and no girl under fourteen shall be employed in any factory for more than six hours a day, including an interval of rest. Another clause in the law enacts that no male under sixteen or female under twenty-one shall work in factories at night. Formidable industrial interests, and the contention of some members that to shorten the hours of child-labor would be to encourage vagabondism, failed to arrest the progress of a measure which will do much to check the physical deterioration of the French.

THE twenty-fourth annual session of the American Medical Association will be held in St. Louis, Mo., May 6, 1873, at 11 A.M.

Physicians desiring to present papers before the Association should observe the following rule:—

"Papers appropriate to the several sections, in order to secure consideration and action, must be sent to the Secretary of the appropriate section at least one month before the meeting which is to act upon them. It shall be the duty of the Secretary, to whom such papers are sent, to examine them with care, and, with the advice of the Chairman of his Section, to determine the time and order of their presentation, and give due notice of the same."

WM. B. ATKINSON, M.D.,
Permanent Secretary.

THE TRANSFUSION OF BLOOD.—The Transfusion Committee, appointed by the Obstetrical Society of London, has adopted the following programme of its aims and objects:—

1. To collect evidence from gentlemen who have had experience in cases of transfusion.

2. To obtain the particulars of all recorded cases (performed on the human subject), with the view of finding out, as far as possible, to what extent the so-called successful cases were due to transfusion.

3. To examine the various kinds of instruments used in both the mediate and immediate forms of the operation.

4. If considered necessary, to institute further experiments for the purpose of determining how far transfusion may be relied upon as a means of saving life, and also the best mode of performing the operation.

The Committee will be happy to receive communications on the subject, which should be addressed to the honorary secretary, Dr. Madge, at the Society's Library, 291 Regent Street, W.—*London Medical Record*.

At a meeting of the Surgical Society of Ireland (Dublin), held Dec. 13th, the question of the relative value of ether and chloroform came up for discussion. After many of those present had taken part in the debate it was finally voted that a committee of gentlemen, representing the several hospitals of Dublin, be appointed to inquire into the subject, to tabulate accurately all the figures and details connected with it, and report on the subject to the Society next year. The committee to whom the subject was referred consists of Drs. Morgan, Jacob, McDonnell and Macnamara, with Mr. Richardson and Mr. Tufnell.

NOTES AND QUERIES.

"HOW SHALL WE REFORM THE AMERICAN MEDICAL ASSOCIATION?"—"While the journals differ in their plans for improving the Association, all agree that the Association as now carried on does not represent American science, and the best men everywhere seem to be anxious that something should be done to redeem ourselves before the world."

Thus saith the *New York Medical Record*; but it adds, "the radical and original proposition made by the Boston Medical and Surgical Journal does not meet with our approval."

Of course not; but the writer of that plan and his associates have no selfish interest at stake in the matter, yet clearly see that nothing less radical will save the profession from further disgrace, to say nothing of plans to "redeem ourselves." That "proposition" may be found in the *Boston Journal*, July 25, 1872, p. 68, and the attention of all *truly desirous* to re-form the Association is earnestly called to it. The "proposition" can doubtless be improved upon in minor details; but none of the expedients in choice of committees, examination of members, and the like, hitherto advanced in other quarters, can avail, even if practicable. A thorough re-formation is needed.

RADICLE.

FUMIGATION.—"Vesicle" and "Murray" (*Gemini*?) should not be faithless, but believing. To be sure, among the latest authorities, Dr. Cameron speaks of the "real use of atmospheric disinfectants" as follows:—"As people cannot comfortably breathe in a room which has just been disinfected by sulphurous acid or chlorine, they are obliged to open doors and windows to admit the fresh air. In this way the use of the disinfectant is to be commended, because it obliges people to ventilate their apartments."

And, Dr. Wanklyn says:—"As was insisted upon in the pages of the *Lancet*, we cannot disinfect the atmosphere without, at the same time, rendering it unfit to breathe, and therefore the employment of atmospheric disinfectants is useless; for if we have to get rid of the air of a room, why should we waste any chemicals upon it before sending it out of the window?"

Again, in the *London Medical Record*, "Volatile disinfection—a practice which rests, in fact, upon a misapprehension."

But such authorities, and common sense, should be disregarded; what are they to the diæta of

VOX POPULI.

MESSENGERS. EDITORS.—Will you please inform me where I can obtain physicians' prescriptions and druggists' labels in Boston.

L. H. L.

MORTALITY IN MASSACHUSETTS.—Deaths in sixteen Cities and Towns for the week ending February 22, 1873.

Boston, 129—Charlestown, 16—Worcester, 25—Lowell, 20—Milford, 7—Chelsea, 10—Cambridge, 17—Salem, 10—Lawrence, 8—Springfield, 4—Lynn, 14—Gloucester, 7—Fitchburg, 2—Newburyport, 5—Somerville, 3—Haverhill, 3. Total, 280.

Prevalent Diseases.—Consumption, 39—pneumonia, 25—smallpox, 16—scarlet fever, 13.

The deaths from smallpox were as follows:—In Boston eight, Chelsea two, Lawrence two, Salem one, Lynn one, Gloucester one, and Charlestown one.

GEORGE DERBY, M.D.,

Secretary of the State Board of Health.

DEATHS IN BOSTON for the week ending Saturday, March 1st, 1870. Males, 92; females, 88. Accident, 8—apoplexy, 3—inflammation of the bowels, 3—disease of the bowels, 1—bronchitis, 4—bronchocele, 1—inflammation of the brain, 2—congestion of the brain, 2—disease of the brain, 9—cancer, 1—cerebro-spinal meningitis, 5—cholera infantum, 1—consumption, 22—convulsions, 5—croup, 6—debility, 5—dropsy of the brain, 7—diphtheria, 1—exhaustion, 2—erysipelas, 1—scarlet fever, 15—typhoid fever, 3—fever, 1—disease of heart, 5— hæmorrhage, 1—disease of the kidneys, 6—disease of the liver, 2—laryngitis, 1—congestion of the lungs, 4—inflammation of the lungs, 10—marasmus, 3—old age, 6—paralysis, 5—pleurisy, 1—premature birth, 4—peritonitis, 1—puerperal disease, 5—rheumatism, 1—scrofula, 1—smallpox, 11—suicide, 2—teething, 1—whooping cough, 1—unknown, 2.

Under 5 years of age, 63—between 5 and 20 years, 27—between 20 and 40 years, 39—between 40 and 60 years, 21—over 60 years, 30. Born in the United States, 180—Ireland, 36—other places, 14.